WHAT IS CLAIMED IS:

1. A method for manufacturing a semiconductor device comprising the steps of:

adding first noble gas to a semiconductor film formed over an insulating surface, and

irradiating first and second laser light to the semiconductor film added with the first noble gas in an atmosphere of second noble gas,

wherein the first laser light has a wavelength of a harmonic,

wherein the second laser light has a wavelength of a fundamental wave, and

wherein a magnetic field is applied to the semiconductor film added with the first noble gas when the first and the second laser light are irradiated.

2. A method for manufacturing a semiconductor device comprising the steps of:

adding first noble gas to a semiconductor film formed over an insulating surface, and

irradiating first and second continuous wave laser light to the semiconductor film added with the first noble gas in an atmosphere of second noble gas,

wherein the first laser light has a wavelength of a harmonic,

wherein the second laser light has a wavelength of a fundamental wave, and

wherein a magnetic field is applied to the semiconductor film added with the first noble gas in a direction perpendicular to the semiconductor film when the first and the second laser light are irradiated.

3. A method for manufacturing a semiconductor device comprising the steps of:

adding first noble gas to a semiconductor film formed over an insulating surface by an ion doping method, and

irradiating first and second continuous wave laser light to the semiconductor film added with the first noble gas in an atmosphere of second noble gas,

wherein the first laser light has a wavelength of a harmonic,

wherein the second laser light has a wavelength of a fundamental wave, and

wherein a magnetic field is applied to the semiconductor film added with the first noble gas in a direction parallel to a scanning direction of the first laser light when the first and the second laser light are irradiated.

4. A method for manufacturing a semiconductor device comprising the steps of:

adding first noble gas to a semiconductor film formed over an insulating surface by an ion doping method, and

irradiating first and second continuous wave laser light to the semiconductor film added with the first noble gas in an atmosphere of second noble gas,

wherein the first laser light has a wavelength of a harmonic,

wherein the second laser light has a wavelength of a fundamental wave, and

wherein a magnetic field is applied to the semiconductor film added with the first noble gas in a direction which is parallel to the semiconductor film and which is perpendicular to a scanning direction of the first laser light when the first and the second laser light are irradiated.

5. A method for manufacturing a semiconductor device according to Claim 1,

wherein the first and the second laser light are oscillated from continuous wave laser oscillators.

6. A method for manufacturing a semiconductor device according to any one of Claims 1 to 4,

wherein the first laser light has a wavelength of a second harmonic.

7. A method for manufacturing a semiconductor device according to any one of Claims 1 to 4,

wherein a beam spot of the first laser light is completely overlapped with a beam spot of the second laser light.

8. A method for manufacturing a semiconductor device according to any one of Claims 1 to 4,

wherein the noble gas is He, Ne, Ar, Kr, or Xe.

9. A method for manufacturing a semiconductor device according to any one of Claims 1 to 4,

wherein a concentration of the noble gas is in the range of 1×10^{18} atoms/cm^3 to 1×10^{21} atoms/cm^3.

10. A method for manufacturing a semiconductor device according to any one of Claims 1 to 4,

wherein a magnetic flux density of the magnetic field is in the range of 1000 G to 10000 G.

11. A laser irradiation apparatus comprising:

first and second laser oscillators,

a first optical system for converging first laser light oscillated from the first laser oscillator,

a second optical system for converging second laser light oscillated from the second laser oscillator,

a chamber equipped with a window for transmitting the first and the second laser light,

means for supplying gas into the chamber,

means for evacuating the chamber,

a stage for mounting a processing object thereon, and

means for applying a magnetic field to the processing object,

wherein the first laser light has a wavelength of a harmonic, and

wherein the second laser light has a wavelength of a fundamental wave.

12. A laser irradiation apparatus according to Claim 11,

wherein the first and the second laser oscillators are continuous wave laser oscillators.

13. A laser irradiation apparatus according to Claim 11 or 12,

wherein the first laser light has a wavelength of a second harmonic.

14. A laser irradiation apparatus comprising:

first and second laser oscillators,

a cylindrical lens and a mirror for converging first laser light oscillated from the first laser oscillator,

a cylindrical lens and a mirror for converging second laser light oscillated from the second laser oscillator,

a chamber equipped with a window for transmitting the first and the second laser light,

a noble gas supplying system in the chamber,

an evacuating system in the chamber,

a stage for mounting a processing object thereon, and

a magnetic pole of a magnetic circuit for applying a magnetic field to the processing object,

wherein the first laser light has a wavelength of a harmonic, and

wherein the second laser light has a wavelength of a fundamental wave.

15. A laser irradiation apparatus according to Claim 14,

wherein the first and the second laser oscillators are continuous wave laser oscillators.

16. A laser irradiation apparatus according to Claim 14 or 15,

wherein the first laser light has a wavelength of a second harmonic.

17. A method for manufacturing a semiconductor device according to any one of Claims 1 to 4,

wherein a beam spot of the first laser light and a beam spot of the second laser light are overlapped.

18. A method for manufacturing a semiconductor device according to any one of Claims 1 to 4,

wherein the semiconductor film is added with the first noble gas by an ion doping method.

19. A method for manufacturing a semiconductor device comprising the step of irradiating first and second laser light to a semiconductor film formed over an insulating surface added with first noble gas in an atmosphere of second noble gas,

wherein the first laser light has a wavelength of a harmonic,

wherein the second laser light has a wavelength of a fundamental wave, and

wherein a magnetic field is applied to the semiconductor film added with the first noble gas when the first and the second laser light are irradiated.

20. A method for manufacturing a semiconductor device comprising the step of irradiating first and second continuous wave laser light to a semiconductor film formed over an insulating surface added with first noble gas in an atmosphere of second noble gas,

wherein the first laser light has a wavelength of a harmonic,

wherein the second laser light has a wavelength of a fundamental wave, and

wherein a magnetic field is applied to the semiconductor film added with the first noble gas in a direction perpendicular to the semiconductor film when the first and the second laser light are irradiated.

21. A method for manufacturing a semiconductor device comprising the step of irradiating first and second continuous wave laser light to a semiconductor film formed over an insulating surface added with first noble gas in an atmosphere of second noble gas,

wherein the first laser light has a wavelength of a harmonic,

wherein the second laser light has a wavelength of a fundamental wave, and

wherein a magnetic field is applied to the semiconductor film added with the first noble gas in a direction parallel to a scanning direction of the first laser light when the first and the second laser light are irradiated.

22. A method for manufacturing a semiconductor device comprising the step of irradiating first and second continuous wave laser light to a semiconductor film formed over an insulating surface added with first noble gas in an atmosphere of second noble gas,

wherein the first laser light has a wavelength of a harmonic,

wherein the second laser light has a wavelength of a fundamental wave, and

wherein a magnetic field is applied to the semiconductor film added with the first noble gas in a direction which is parallel to the semiconductor film and which is perpendicular to a scanning direction of the first laser light when the first and the second laser light are irradiated.

23. A method for manufacturing a semiconductor device according to Claim 19,

wherein the first and the second laser light are oscillated from continuous wave laser oscillators.

24. A method for manufacturing a semiconductor device according to any one of Claims 19 to 22,

wherein the first laser light has a wavelength of a second harmonic.

25. A method for manufacturing a semiconductor device according to any one of Claims 19 to 22,

wherein a beam spot of the first laser light is overlapped completely with a beam spot of the second laser light.

26. A method for manufacturing a semiconductor device according to any one of

Claims 19 to 22,

wherein the noble gas is He, Ne, Ar, Kr, or Xe.

27. A method for manufacturing a semiconductor device according to any one of Claims 19 to 22,

wherein a concentration of the noble gas is in the range of 1×10^{18} atoms/cm^3 to 1×10^{21} atoms/cm^3.

28. A method for manufacturing a semiconductor device according to any one of Claims 19 to 22,

wherein a magnetic flux density of the magnetic field is in the range of 1000 G to 10000 G.

29. A method for manufacturing a semiconductor device according to any one of Claims 19 to 22,

wherein the semiconductor film added with the first noble gas is formed by an ion doping method.

30. A method for manufacturing a semiconductor device according to any one of Claims 19 to 22,

wherein a beam spot of the first laser light is overlapped with a beam spot of the second laser light.